

IN THE CLAIMS:

1 1.-2. (Cancelled)

1 3. (Currently Amended) A mass flow controller module that can control fluid flow
2 and be installed as a unitary component, comprising:

3 a housing block member having a fluid passageway, mounted on the housing
4 block member from an upstream position is a pressure control valve unit, a flow rate sensor unit
5 and a flow rate control valve unit;

6 a pressure sensor unit operatively mounted in the fluid passageway; and

7 a control unit operatively connected to the pressure control valve unit, the flow
8 rate sensor unit, the flow rate control valve unit and the pressure sensor unit whereby the control
9 unit can automatically set and maintain a constant flow rate despite changes in fluid pressure,
10 wherein the housing block member has a non-linear fluid passageway with openings to the
11 passageway on an upper surface, the openings including a first annular valve seat for operatively
12 interfacing with a diaphragm member of the pressure control valve unit, a pair of ports for
13 connection to the flow rate sensor unit and a second annular valve seat for operatively interfacing
14 with a diaphragm member of the flow rate control valve.

1 4. (Previously Presented) The mass flow controller module of claim 3 wherein a
2 second pressure sensor unit is mounted between the pressure control valve and the flow rate
3 sensor and operatively connected to the control unit.

1 5. (Previously Presented) The mass flow controller module of claim 3 wherein the
2 pressure control valve unit, flow rate sensor unit and flow rate control valve unit are respectively

3 mounted adjacent each other on fluid openings on the housing block member including a
4 pressure control valve seat and a flow rate control valve seat.

1 6. (Previously Presented) The mass flow controller module of claim 3 further
2 including a filter member mounted in the housing block member fluid passageway upstream of
3 the pressure control valve unit.

1 7. (Cancelled)

1 8. (Currently Amended) The mass flow controller module of claim [[7]] 3 wherein
2 the openings to the fluid passageway are aligned in a row adjacent each other across the housing
3 block member.

1 9. (Currently Amended) In a semiconductor production assembly utilizing a source
2 of fluid, the improvement of a mass flow controller module that can control fluid flow and be
3 installed as a unitary component, comprising:

4 a housing block member having a fluid passageway connected to the source of
5 fluid, mounted on the housing block member from an upstream position is a pressure control
6 valve unit, a flow rate sensor unit and a flow rate control valve unit;

7 a pressure sensor unit operatively mounted in the fluid passageway; and

8 a control unit operatively connected to the pressure control valve unit, the flow
9 rate sensor unit, the flow rate control valve unit and the pressure sensor unit whereby the control
10 unit can automatically set and maintain a constant flow rate despite changes in fluid pressure,
11 wherein the housing block member has a non-linear fluid passageway with openings to the
12 passageway on an upper surface, the openings including a first annular valve seat for operatively

13 interfacing with a diaphragm member of the pressure control valve unit, a pair of ports for
14 connection to the flow rate sensor unit and a second annular valve seat for operatively interfacing
15 with a diaphragm member of the flow rate control valve.

1 10. (Previously Presented) The semiconductor assembly of claim 9 wherein a second
2 pressure sensor unit is mounted between the pressure control valve and the flow rate sensor and
3 operatively connected to the control unit.

1 11. (Previously Presented) The semiconductor assembly of claim 9 wherein the
2 pressure control valve unit, flow rate sensor unit and flow rate control valve unit are respectively
3 mounted adjacent each other on fluid openings on the housing block member including a
4 pressure control valve seat and a flow rate control valve seat.

1 12. (Previously Presented) The semiconductor assembly of claim 9 further including
2 a filter member mounted in the housing block member fluid passageway upstream of the
3 pressure control valve unit.

1 13. (Cancelled)

1 14. (Previously Presented) The semiconductor assembly of claim 9 wherein the
2 openings to the fluid passageway are aligned in a row adjacent each other across the housing
3 block member.

1 15. (New) In a semiconductor production assembly utilizing a source of fluid, the
2 improvement of a mass flow controller module that can control fluid flow and be installed as a
3 unitary component, comprising:

4 a housing block member having a fluid passageway connected to the source of
5 fluid, mounted on the housing block member from an upstream position is a pressure control
6 valve unit, a flow rate sensor unit and a flow rate control valve unit;

7 a pressure sensor unit operatively mounted in the fluid passageway; and

8 a control unit operatively connected to the pressure control valve unit, the flow
9 rate sensor unit, the flow rate control valve unit and the pressure sensor unit whereby the control
10 unit can automatically set and maintain a constant flow rate despite changes in fluid pressure,
11 wherein the housing block member has a non-linear fluid passageway with openings to the
12 passageway on an upper surface, the openings including a first annular valve seat for operatively
13 interfacing with a diaphragm member of the pressure control valve unit, a pair of ports for
14 connection to the flow rate sensor unit and a second annular valve seat for operatively interfacing
15 with a diaphragm member of the flow rate control valve and the openings to the fluid
16 passageway are aligned in a row adjacent each other across the housing block member.

1 16. (New) The semiconductor assembly of claim 15 wherein a second pressure
2 sensor unit is mounted between the pressure control valve and the flow rate sensor and
3 operatively connected to the control unit.

1 17. (New) The semiconductor assembly of claim 16 wherein the pressure control
2 valve unit, flow rate sensor unit and flow rate control valve unit are respectively mounted
3 adjacent each other on fluid openings on the housing block member including a pressure control
4 valve seat and a flow rate control valve seat.

1 18. (New) The semiconductor assembly of claim 15 further including a filter member
2 mounted in the housing block member fluid passageway upstream of the pressure control valve
3 unit.